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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/844,700	04/27/2001	Arun Shah	68110328.710	9543

23562 7590 07/08/2003

BAKER & MCKENZIE  
PATENT DEPARTMENT  
2001 ROSS AVENUE  
SUITE 2300  
DALLAS, TX 75201

EXAMINER

HWANG, JOON H

ART UNIT	PAPER NUMBER
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2172

DATE MAILED: 07/08/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

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<b>Office Action Summary</b>	<b>Application No.</b> 09/844,700	<b>Applicant(s)</b> SHAH ET AL.	
	<b>Examiner</b> Joon H. Hwang	<b>Art Unit</b> 2172	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 27 April 2001.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All   b) ☐ Some \*   c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>3,7,9,10</u> . | 6) <input type="checkbox"/> Other: _____                                    |

**DETAILED ACTION**

1. The pending claims are 1-16.

***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Weissman et al. (U.S. Patent No. 6,212,524) in view of Rogers (U.S. Patent No. 6,212,515).

With respect to claim 1, Weissman discloses calculating a measure in a database having a plurality of stars (aggregate tables, lines 9-20 in col. 8 and lines 38-48 in col. 5). Weissman discloses a star schema comprising a fact table and a table for each supported dimension (lines 26-39 in col. 2). Weissman discloses metadata for a hierarchy of a dimension for dimension columns, which teaches levels of the dimension (line 23 in col. 28 thru line 8 in col. 29). Weissman discloses selecting a constellation (a stargroup) associated with the measure, wherein the constellation (the stargroup) comprising one or more stars (aggregates) comprising a set of dimension indicators associated with levels (fig. 7, fig. 30, lines 36-40 in col. 3, lines 9-26 in col. 14, lines 15-42 in col. 31, lines 20-63 in col. 33, lines 19-54 in col. 35, line 24 in col. 13 thru line 56 in col. 16, lines 25-48 in col. 17, lines 14-67 in col. 27, and line 65 in col. 28 thru line 8 in

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col. 29). Weissman discloses selecting a particular star (an aggregate) of the one or more stars (aggregates) and querying the tables comprising facts (lines 38-67 in col. 5, lines 14-55 in col. 27, fig. 34, and fig. 36). Weissman is silent on an indication of a level of aggregation. However, Rogers further discloses a physical partition (an aggregate table) containing levels of each dimension, which are aggregated (lines 1-25 in col. 3) for selecting an appropriate aggregate fact table. This teaches an indication of a level of aggregation. Therefore, based on Weissman in view of Rogers, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Weissman with the teaching of Rogers in order to select an appropriate aggregate fact table for the querying.

With respect to claim 2, Roger further discloses comparing one or more dimension levels to one or more requested levels (lines 21-41 in col. 4 and fig. 2) in order to select an appropriate aggregate fact table. Therefore, the limitations of claim 2 are rejected in the analysis of claim 1 above, and the claim is rejected on that basis.

With respect to claim 3, Weissman discloses comparing each of the stars (aggregates) associated with tables of aggregated facts of successively lower aggregation (lines 15-55 in col. 27) in order to determine which aggregate most closely suits a particular query.

With respect to claim 4, Roger further discloses selecting the particular aggregate table (the star) wherein each of the dimension levels is equal to or exceed each of the requested levels (abstract, lines 46-64 in col. 4, and lines 5-41 in col. 2) in

order to select an appropriate aggregate fact table. Therefore, the limitations of claim 4 are rejected in the analysis of claim 2 above, and the claim is rejected on that basis.

With respect to claim 5, Weissman discloses query mechanism metadata for a query interface to receive a request for calculating a metric (an aggregate query), wherein the request to calculate a metric is associated with levels of dimensions and retrieving a metric definition associated with the metric, wherein the metric definition comprises the measure (line 15 in col. 31 thru line 16 in col. 35 and figs. 30-35).

Claims 6-10 are essentially the same as claims 1-5 except that it sets forth the claimed invention as a computer-readable medium rather than a method and rejected for the same reasons as applied hereinabove.

With respect to claim 11, Weissman discloses a memory means for storing data (lines 37-46 in col. 6). Weissman discloses storing a name and key of an aggregate, teaching a star identifier identifying a star (an aggregate) associated with a particular fact table (fig. 3 and line 54 in col. 15 thru line 56 in col. 16). Roger further discloses a dimension hierarchy for each dimension could be represented as an array (lines 42-46 in col. 4). Therefore, the limitations of claim 11 are rejected in the analysis of claim 1 above, and the claim is rejected on that basis.

With respect to claim 12, Rogers further discloses a physical partition (an aggregate table) containing levels of each dimension, which are aggregated (lines 1-25 in col. 3) for selecting an appropriate aggregate fact table. Therefore, the limitations of claim 12 are rejected in the analysis of claim 11, and the claim is rejected on that basis.

With respect to claim 13, Roger further discloses an indication of a particular level of a dimension, which teaches a dimension indicator (lines 3-25 in col. 3) for selecting an appropriate aggregate fact table. Therefore, the limitations of claim 13 are rejected in the analysis of claim 12, and the claim is rejected on that basis.

With respect to claim 14, Weissman discloses a constellation (a stargroup) associated with the measure, wherein the constellation (the stargroup) comprising one or more stars (aggregates) associated with fact tables (fig. 7, fig. 30, lines 36-40 in col. 3, lines 9-26 in col. 14, lines 15-42 in col. 31, lines 20-63 in col. 33, lines 19-54 in col. 35, line 24 in col. 13 thru line 56 in col. 16, lines 25-48 in col. 17, lines 14-67 in col. 27, and line 65 in col. 28 thru line 8 in col. 29). Roger further discloses a dimension hierarchy for each dimension could be represented as an array (lines 42-46 in col. 4). Therefore, the limitations of claim 14 are rejected in the analysis of claim 11 above, and the claim is rejected on that basis.

With respect to claim 15, Weissman discloses storing stars (aggregates) based on the degree of aggregation of the first aggregate fact tables associated therewith (fig. 7, figs. 13-15, line 52 in col. 15 thru line 56 in col. 16, and fig. 3).

With respect to claim 16, Weissman discloses multiple constellations (multiple stargroups, lines 9-26 in col. 14 and fig. 7). Therefore, the limitations of claim 16 are rejected in the analysis of claim 14 above, and the claim is rejected on that basis.

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

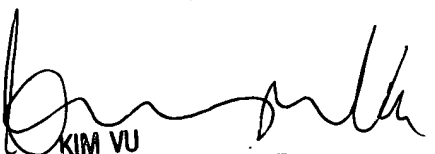
Lore et al. (U.S. Patent No. 6,163,774), Colby et al. (U.S. Patent No. 6,493,699), Malloy (U.S. Patent No. 5,926,818), Chen et al. (U.S. Patent No. 6,446,063), Tse et al. (U.S. Patent No. 6,282,544), and Althoff (6,366,922) disclose a star schema, fact tables, dimension tables, and aggregates.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joon H. Hwang whose telephone number is 703-305-6469. The examiner can normally be reached on 9:30-6:00(M~F).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kim Y Vu can be reached on 703-305-4393. The fax phone numbers for the organization where this application or proceeding is assigned are 703-746-7239 for regular communications and 703-746-7238 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

Joon Hwang  
June 28, 2003



KIM VU  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2100